SERIAL NO. 3231

ONKYO SERVICE MANUAL

Stereo Preamplifier

MODEL P-308

UD	120V AC, 60Hz
UG	220V AC, 50Hz
UQ	240V AC, 50Hz
UW	120V or 220V AC, 50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

Input Sensitivity and Impedance:
PHONO MC: 160μV/(100/220) ohms
PHONO MM: 2.5mV/(47 kohms/100 kohms)
CD, TUNER, LINE, TAPE PLAY: 150mV/20 kohms

Rated Output and Impedance:
TAPE REC: 150mV/1.2 kohms (PHONO)
OUTPUT: 1.0V/160 ohms Max. 6V

RIAA Deviation: ±0.2dB, 20–20,000Hz

Frequency Response (CD, TUNER, LINE, TAPE): +0, –3dB, 0.8Hz – 170kHz

Phono Overload:
PHONO MM: 210mV RMS at 1kHz, THD 0.05%
PHONO MC: 13mV RMS at 1kHz, THD 0.05%

Total Harmonic Distortion:
0.0008% at PHONO MM, 3V output
0.003% at PHONO MC, 3V output
0.0005% at CD, TUNER, LINE and TAPE, 3V output

Intermodulation Distortion (CD): 0.003% (70Hz: 7kHz = 4:1)

Signal-to-Noise Ratio:
PHONO MC: 81dB (IHF A-202)
PHONO MM: 92dB (IHF A-202)
CD: 101dB (IHF A-202)

Tone Control (Vol. –20dB):
BASS: ±10dB at 20Hz
TURN OVER FREQUENCY
BASS: 450 Hz
CONTRABASS: 200Hz BOOST ONLY
TREBLE: ±8dB at 20kHz

Filters: HIGH CUT: (TREBLE min.): 6dB/oct, 7kHz

Inputs: PHONO, CD, TUNER, LINE 1 & 2, TAPE PLAY 1, 2 & 3,

Outputs:
TAPE REC OUT 1, 2 & 3
OUTPUT: 1 (fixed) 2 (variable)

Power Supply:
Canadian models: AC 120V, 60Hz
European models: AC 220V, 50Hz
British and Australian models: AC 240V, 50Hz
Worldwide models: AC 120V, 60Hz/AC 220V, 50Hz

Dimensions:
465(W) x 103(H) x 403(D) mm
18 5/16" x 4 1/16" x 15 7/8"

Weight: 8.5 kg, 18.7 lbs.

Specifications and features are subject to change without notice.

PRECAUTIONS

1. **Replacing the fuses**

For continued protection against risk fire, replace only with same type and same rating fuse.

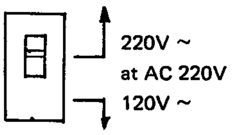
CIRCUIT NO.	PARTS NO.	DESCRIPTION
F901	252045	1A (ST–6), Primary fuse (120V, 120V/220V model)
F902	252063	0.5A–SE–EAWK, Primary fuse (220V, 120V/220V, 240V model)

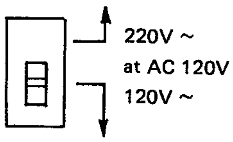
2. **Insulation resistance mesurement (Only U.S.A. model)**

Connect the insulating-resistance tester between the plug of power supply cable and the terminal GND on the back panel. Specifications; More than 10 MΩ at 500V.

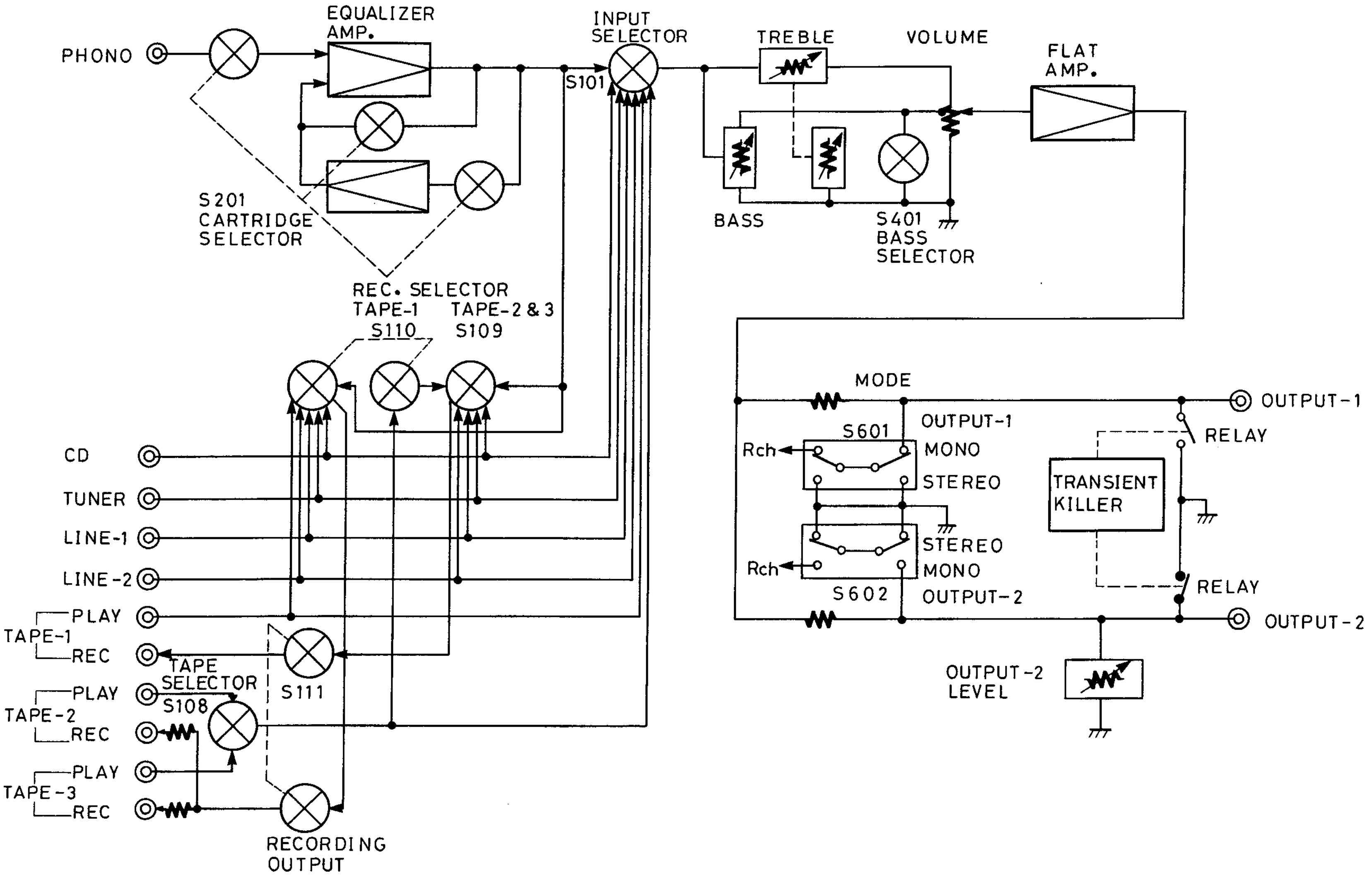
3. **Voltage selector (rear panel)**

Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on. Voltage is changed by sliding the groove in the switch with a screwdriver or similar instrument to the up or down position. Confirm that the switch has been moved all the way to the up or down before turning the power switch on. If there is no voltage selector switch on the unit you have purchased, it can only be used in areas where the power supply voltage is the same as that of the unit.

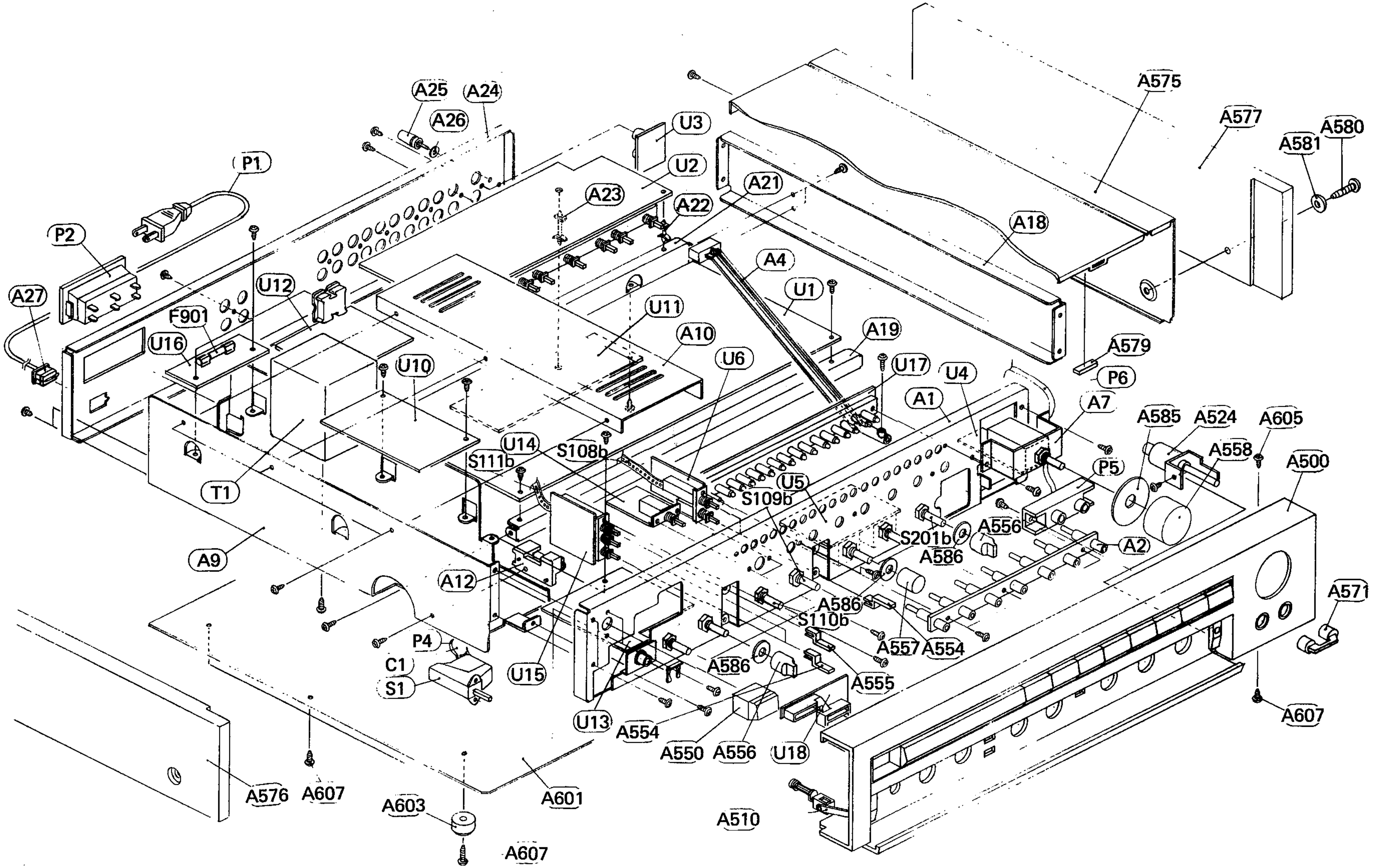




BLOCK DIAGRAM


PHONO
EQUALIZER AMP.
INPUT SELECTOR
S101
TREBLE
VOLUME
FLAT AMP.
S201 CARTRIDGE SELECTOR
BASS
S401 BASS SELECTOR
REC. SELECTOR
TAPE-1 S110
TAPE-2 & 3 S109
CD
TUNER
LINE-1
LINE-2
TAPE-1 PLAY
TAPE-1 REC
TAPE-2 PLAY
TAPE-2 REC
TAPE-3 PLAY
TAPE-3 REC
TAPE SELECTOR S108
S111
RECORDING OUTPUT
MODE
S601
OUTPUT-1
MONO
STEREO
Rch
S602
STEREO
MONO
OUTPUT-2
Rch
TRANSIENT KILLER
RELAY
RELAY
OUTPUT-1
OUTPUT-2
OUTPUT-2 LEVEL

CHASSIS-EXPLODED VIEW


A25
A24
A26
U3
P1
U2
A23
A21
A22
A575
A577
A581
A580
A18
P2
A4
A27
U12
U1
F901
U11
A19
U16
A10
U6
U10
U17
U4
A579
P6
A1
A7
A585
A524
A605
U14
S108b
A558
S111b
P5
A500
U5
S109b
T1
A556
S201b
A586
A2
A9
A12
A586
S110b
A571
P4
A557
A554
C1
A586
S1
U15
A555
U13
A554
A607
A550
A556
U18
A576
A607
A603
A601
A510
A607

CHASSIS-EXPLODED VIEW-PARTS LIST

REF NO.	PARTS NO.	DESCRIPTION
A1	27110283	Front panel ass'y
A2	27267469A	Guide ass'y (Joint)
A4	27273051A	Joint (M)
A7	27141062	Bracket (VOL)
A9	27115201A	Side bracket (L)
A10	27150213	Shield plate
A12	27300817	Damper ass'y
A18	27115203A	Side bracket (R)
A19	27130423	Bracket (FR)
A21	27130425	Bracket (RE)
A22	27190480	Holder
A23	27190470	Holder
A24	27120844	Back panel
	27120845	Back panel [G]
	27120860	Back panel [W]
	27120861	Back panel [X]
	27120862	Back panel [Q]
A25	25060041	Ground terminal
A26	87644010	W4 × 10F(BC), Washer
A27	27300750	Bushing (AC cable)
A500	17828121	Front panel ass'y
	17829121	Front panel ass'y [N][X]
A510	27273055A	Joint ass'y (Damper)
(A511)	27141072	Bracket (Damper)
(A512)	27300825	Joint (Damper)
(A513)	27260217A	Damper pin
(A514)	8930201S	ES-2S, Circlip
A524	27230019	Push latch ass'y
A550	28322522A	Knob ass'y (POW)
A554	28322525	Knob (PUSH)
A555	28322526	Knob (PUSH)
A556	28322527	Knob (HANE)
A557	28322528A	Knob (TONE)
A558	28322529A	Knob (VOL)
A571	28330071	Cap
A575	28184318A	Top cover
A576	28185255	Side board (L)
A577	28185256	Side board (R)
A579	28140020	4 × 10 × 40mm, Cushion
A580	836440303	4STV + 30CQ(BC), Screw
A581	870086	4 × 12BC(BC), Special washer
A585	28140126	ϕ53, Cushion
A586	28140219	ϕ20, Cushion
A601	27170227	Bottom board
A603	27175009A	Bottom leg
A605	838430068	3TTB+6B(BC), Tapping screw
A607	831430088	3TTW + 8B(BC), Tapping screw

REF.NO.	PARTS NO.	DESCRIPTION
⚠ T1	2300104	NPT-919D, Power transformer
	2300105	NPT-919G, Power transformer [G]
	2300106	NPT-919DG, Power transformer [W][X]
	2300107	NPT-919Q, Power transformer [Q]
⚠ C1	3500065A	0.01μF, AC400V, Capacitor
⚠ S1	25035345A	NPS-111-L308P, Power switch
	25035398	NPS-111-362P, Power switch [G][W][Q]
⚠ S2	25065123	NSS-1258P, Slide switch [W]
S108b	25065292	Remote switch, wire section
S109b	25030279	NRSM-106-15BU, Remote switch
S110b	25030280	NRSM-106-15BU, Remote switch
S111b	25065284-1	Remote switch, wire section
S201b	25030281A	NRSM-104-15BU, Remote switch
⚠ P1	253122	AS-UC-6#16, Power supply cable
	253129A	AS-CEE, Power supply cable[G][W]
	253118	AS-SAA, Power supply cable [Q]
⚠ P2	25050293	NSCT-6P120, AC outlet [D][X]
P3	25108010	LG-2C, Lug terminal [G][W][Q]
P4	27300601	SB-1925, Cover (Capacitor)
P5	25045200	NPJ-2PBL81, Terminal
P6	2000565	NSAS-3P-521, Socket ass'y
P7	28330072	Cap (AC outlet) [X]
⚠ F901	252045	1A ST-6, Primary fuse [D][N][X][W]
⚠ F902	252063	0.5A-SE-EAWK, Primary fuse [G][Q][X][W]

REF.NO.	PARTS NO.	DESCRIPTION
U1	17828545-1	NAEF-2645-1, Equalizer amplifier pc board ass'y
U2	17828546-1	NASW-2646-1, Input selector switch pc board ass'y
U3	17828547-1	NAPJ-2647-1, Phono input terminal pc board ass'y
U4	17828548-1	NAVR-2648-1, Volume controle pc board ass'y
U5	17828549-1	NATC-2649-1, Tone control circuit pc board ass'y
U6	17828550-1	NASW-2650-1, Bass selector switch pc board ass'y
U10	17828554-1	NAPS-2654-1, Power supply pc board ass'y
U11	17828555-1	NASW-2655-1, REC.Selector switch pc board ass'y
U12	17828556-1	NATK-2656-1, Transient killer circuit pc board ass'y
U13	17828557-1	NAPH-2657-1, Phone amplifier circuit pc board ass'y
U14	17828558-1	NASW-2658-1, Output switch pc board ass'y
U15	17828559-1	NASW-2659-1, Recording output switch pc board ass'y
U16	17828560-1	NAFU-2660-1, Fuse pc board ass'y
	17824560-1A	NAFU-2660-1A, Fuse pc board ass'y[G][Q]
	17820560-1B	NAFU-2660-1B, Fuse pc board ass'y [W]
U17	17828561-1	NADIS-2661-1, Input display pc board ass'y
U18	17828562-1	NADIS-2662-1, Display pc board ass'y
U19	17824563-1A	NASW-2663-1A, Switch pc board ass'y [G][W][Q]

NOTE

[D]: Only 120V models
[G]: Only 220V models
[W]: Only 120V/220V models
[N]: Only U.S.A. models
[X]: Only Military market models
[Q]: Only British and Australian models

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD PARTS LIST

EQUALIZER AMPLIFIER PC BOARD (NAEF-2645-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Transistors	
Q201~Q204	2211535 or 2211536	2SK146(GR) or 2SK146(BL)
Q205~Q208	2211895 or 2211896	2SC1815L(GR) or 2SC1815L(BL)
Q209,Q210	2211414	2SC1627(Y)
Q211,Q212	2211515 or 2211516	2SA995(F) or 2SA995(G)
Q213~Q218	2211975	2SA1015L(GR)
Q219,Q220	2211895 or 2211896	2SC1815L(GR) or 2SC1815L(BL)
Q221,Q222	2211414	2SC1627(Y)
Q223,Q224	2211424	2SA817(Y)
Q225,Q226	2211414	2SC1627(Y)
Q227,Q228	2211424	2SA817(Y)
Q501,Q502	2212805 or 2212806	2SK389(GR) or 2SK389(BL)
Q503~Q508	2211255	2SC1815(GR)
Q509,Q510	2211515 or 2211516	2SA995(F) or 2SA995(G)
Q511~Q514	2211455	2SA1015(GR)
Q515,Q516	2211255	2SC1815(GR)
Q517,Q518	2211164	2SC2120(Y)
Q519,Q520	2211504	2SA950(Y)
Q521,Q522	2211164	2SC2120(Y)
Q523,Q524	2211504	2SA950(Y)
Q931	2201404 or 2201403	2SD1406(Y) or 2SD1406(O)
Q932	2201394 or 2201393	2SB1015(Y) or 2SB1015(O)
Q933	2211254 or 2211255	2SC1815(Y) or 2SC1815(GR)
Q934	2211454 or 2211455	2SA1015(Y) or 2SA1015(GR)
Q935	2211254 or 2211255	2SC1815(Y) or 2SC1815(GR)
Q936	2211454 or 2211455	2SA1015(Y) or 2SA1015(GR)
Q951	2201404 or 2201403	2SD1406(Y) or 2SD1406(O)
Q952	2201394 or 2201393	2SB1015(Y) or 2SB1015(O)
Q953	2211254 or 2211255	2SC1815(Y) or 2SC1815(GR)
Q954	2211454 or 2211455	2SA1015(Y) or 2SA1015(GR)
Q955	2211254 or 2211255	2SC1815(Y) or 2SC1815(GR)
Q956	2211454 or 2211455	2SA1015(Y) or 2SA1015(GR)
	ICs	
Q301,Q302	222585	NJM4558DXB
Q551,Q552	222465	NJM4558D
	Diodes	
D201~ D204	223145	1S2076TD
D205~ D210	225218	LTZ-MR15
D501~ D504	223145	1S2076TD
D505~ D510	225218	LTZ-MR15
D931,D932,D951 D952	2239511 or 2243171	RD6.8E-B1 or MTZ6.8-A
	Capacitors	
C209,C210	372121814	180pF, 50V, Styrene

CIRCUIT NO.	PART NO.	DESCRIPTION
C211,C212	372122214	220pF, 50V, Styrene
C213~ C216	379121535	0.015 μF, 50V, Film (DEW)
C217,C218	379125625	5600pF, 50V, Film (DEW)
C219,C220	372122214	220pF, 50V, Styrene
C221,C222	379127524	7500pF, 50V, Film (DEW)
C223~ C226	379121034	0.01μF, 50V, Film (DEW)
C227,C228	379124334	0.043 μF,50V, Film (DEW)
C229,C230	379123634	0.036 μF, 50V, Film (DEW)
C231,C232	372126804	68pF, 50V, Styrene
C237,C238	391232219	220 μF, 10V, Elect. (MUSE)
C239,C240	379122725	2700pF, 50V, Film (DEW)
C241~ C244	354751019	100 μF, 25V, Elect.
C245,C246	354784709	47μF, 50V, Elect.
C301,C302	354741009	10μF, 16V, Elect.
C303~ C306	391252219	220 μF, 25V, Elect. (MUSE)
C307,C308	372123304	33pF,50V, Styrene
C501,C502	372121014	100pF, 50V, Styrene
C503,C504	372122214	220pF, 50V, Styrene
C505,C506	354784799	0.47μF,50V, Elect.
C507,C508	372122704	27pF, 50V, Styrene
C515,C516	391232219	220 μF, 10V, Elect. (MUSE)
C517~ C520	354751019	100 μF, 25V, Elect.
C521,C522	354784709	47μF, 50V, Elect.
C551~ C554	354752209	22μF,25V, Elect.
C555,C556	372123304	33pF, 50V, Styrene
C931,C932	354782219	220 μF, 50V, Elect.
C935,C936	354721019	100 μF, 6.3V, Elect.
C937,C938	354753319	330 μF, 25V, Elect.
C951,C952	354762219	220 μF, 35V, Elect.
C955,C956	354721019	100 μF, 6.3V, Elect.
C957,C958	354743319	330 μF, 16V, Elect.
	Resistors	
R225~ R228	442526804	68Ω, 1/2W, Metal oxide film
R239,R240	442528204	82Ω, 1/2W, Metal oxide film
R265,R266	442524314	430 Ω, 1/2W, Metal oxide film
R267~ R274	442523304	33Ω, 1/2W, Metal oxide film
R275,R276	441625614	560 Ω, 1W, Metal oxide film
R529~ R536	442522404	24Ω, 1/2W, Metal oxide film
R539~ R542	441622014	200 Ω, 1W, Metal oxide film
	Switch	
S201a	25065283	NSS-84111, Remote switch
	Sockets	
JC101	25050272	NSCT-8P100
P203	2000556	NSAS-6P512, Socket ass'y
P501	2000557	NSAS-6P513 Socket ass'y
P502,P503	2000558	NSAS-6P514 Socket ass'y
	Plugs	
P201a,P202a	25055132	NPLG-2P116
P504a ~ P508a	25055133	NPLG-3P117
	Radiator	
P931,P932	27160176	RAD-56
P951,P952	27160145	RAD-51
	Plate	
	25060032B	Bus
	Slield case	
	27225075	

INPUT SELECTOR SWITCH PC BOARD (NASW-2646-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Coils	
L101~ L104	231069	NCH-1119
	Switches	
S101~ S107	25035524	NPS-742-L486
S108a	25065190	NSS-4285, Remote switch
	Terminals	
P102	25045190	NPJ-2PDBL74
P103~ P105	25045199	NPJ-6PDBL80
P106,P107	25045201	NPJ-4PDBL82
P108,P109	25045202	NPJ-4PDBL83
P110,P111	25045202	NPJ-4PDBL83
	Sockets	
JC151,JC154	25050273	NSCT-9P101
(P203,P501)	2000556	NSAS-6P512, Socket ass'y
	Plug	
P006a	25055133	NPLG-3P117

PHONO INPUT TERMINAL PC BOARD (NAPJ-2647-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
P101	25045197	NPJ-2PDBL78, Terminal
P201	2000554	NSAS-4P510, Socket ass'y
P202	2000555	NSAS-4P511, Socket ass'y

VOLUME CONTROLE PC BOARD (NAVR-2648-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
R403	5104185	N27DGL25KT20M, Variable resistor
(P502,P503)	2000558	NSAS-6P514, Socket ass'y

TONE CONTROL CIRCUIT PC BOARD (NATC-2649-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Capacitors	
C401,C402	379121834	0.018 μF, 50V, Film (DEW)
C403,C404	379123924	3900pF, 50V, Film (DEW)
C405,C406	379123334	0.033 μF, 50V, Film (DEW)
C407,C408	379121644	0.16μF, 50V, Film (DEW)
C409,C410	379121844	0.18μF, 50V, Film (DEW)
	Resistors	
R415	5104186	N27DQL11C55K15M, Variable
R417	5104187	N27DQL11C35K44K15M, Variable

BASS SELECTOR SWITCH PC BOARD (NASW-2650-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S401	25035525	NPS-100-122-L487, Bass shift switch
(S108c)	25035525	NPS-100-122-L487, Remote switch, Operation section

POWER SUPPLY PC BOARD (NAPS-2654-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Diodes	
D901,D902	223867	WL02
D903,D904	223890	W01RL
D905~D910	223896	1N4003F
	Capacitors	
C901,C902	375104745	0.47μF, 125V, Film (ME)
C903~C906	375101045	0.1 μF, 125V, Film (ME)
C907,C908	354782229	2200μF, 50V, Elect.
C909,C910	354762229	2200μF, 35V, Elect.
C911,C912	354741029	1000μF, 16V, Elect.
C913	354753319	330 μF, 25V, Elect.
C914	379121035	0.01μF, 50V, Film (DEW)
	Resistors	
R901,R902	442523304	33Ω, 1/2W, Metal oxide film
R903~R906	442520104	1 Ω, 1/2W, Metal oxide film
R907,R908	442520204	2 Ω, 1/2W, Metal oxide film
R909,R910	442526214	620 Ω, 1/2W, Metal oxide film
	Socket	
JC951	25050267	NSCT-3P95

REC. SELECTOR SWITCH PC BOARD (NASW-2655-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Coils	
L105,L106	231069	NCH-1119
	Switches	
S109a,S110a	25065079	NSS-4643, Remote switch
S111a	25065190	NSS-4285, Remote switch
	Socket	
P155	25050267	NSCT-3P95

TRANSIENT KILLER CIRCUIT PC BOARD (NATK-2656-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Transistors	
Q801	2211255	2SC1815(GR)
Q802	2211455	2SA1015(GR)
Q803	2211164	2SC2120(Y)
	Diodes	
D801	223145	1S2076TD
D802,D803	2239492 or 2243162	RD6.2E-B2 or MTZ6.2-B
D804,D805	223145	1S2076TD
	Coils	
L601~L604	231069	NCH-1119
	Capacitors	
C801	354744709	47μF, 16V, Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
C802	354751009	10μF, 25V, Elect.
	Resistors	
R801	442521324	1.3kΩ, 1/2W, Metal oxide film
R807	442526214	620 Ω, 1/2W, Metal oxide film
	Sockets	
JC801	25050270	NSCT-6P98
P506,P507	2000562	NSAS-6P518, Socket ass'y
	Relaies	
RL801,RL802	25065282	NRL-2P1.25A-DC12-39
	Terminal	
P601,P602	25045201	NPJ-4PDBL82

HEADPHONE AMPLIFIER CIRCUIT PC BOARD (NAPH-2657-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	ICs	
Q701	222957	M-5216L
	Diodes	
D701~D704	223145	1S2076TD
	Capacitors	
C701,C702	354760479	4.7 μF, 35V, Elect.
C703,C704	372122214	220 pF, 50V, Styren
C705,C706	354744709	47μF, 16V, Elect.
C707,C708	379121035	0.01μF, 50V, Film (DEW)
C709,C710	354741009	10μ, 16V, Elect.
C711	354760479	4.7 μF, 35V, Elect.
	Resistors	
R711,R712	441624704	47Ω, 1W, Metal oxide film
	Switches	
S603,S604	25030278	NRSM-116-15SBU
	Stereo jack	
P701	25045203	HLJ-4318-01-3010
	Sockets	
JC751	25050272	NSCT-8P101
P504,P505	2000560	NSAS-6P516, Socket ass'y
P508	2000564	NSAS-6P520, Socket ass'y

OUTPUT SWITCH PC BOARD (NASW-2658-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S801	25035372	NPS-122-L336, Output ON/OFF switch

RECORDING OUTPUT SWITCH PC BOARD (NASW-2659-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Diodes	
D855	225137CG or 225137DG or 225137DY	SEL2413CG or SEL2413DG or SEL2413DY
	Resistors	
R851~R853	442521324	1.3kΩ, 1/2W, Metal oxide film
	Switches	
S601,S602,(S111C)	25035526	NPS-222-122-L488

FUSE PC BOARD (NAFU-2660-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
F901a	250113	S-N5051, Fuse holder

FUSE PC BOARD (NAFU-2660-1A)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
F902a	25050065	YSH-403T Fuse holder

FUSE PC BOARD (NAFU-2660-1B)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
F901a	250113	S-N5051, Fuse holder
F902a	25050065	YSH-403T Fuse holder

INPUT DISPLAY PC BOARD (NADIS-2661-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Diodes	
D857~D872	225137CG or 225137DG or 225137DY	SEL2413CG or SEL2413DG or SEL2413DY
	Resistor	
R854	442521324	1.3kΩ, 1/2W, Metal oxide film
	Holder	
	27190456	Holder (LED)

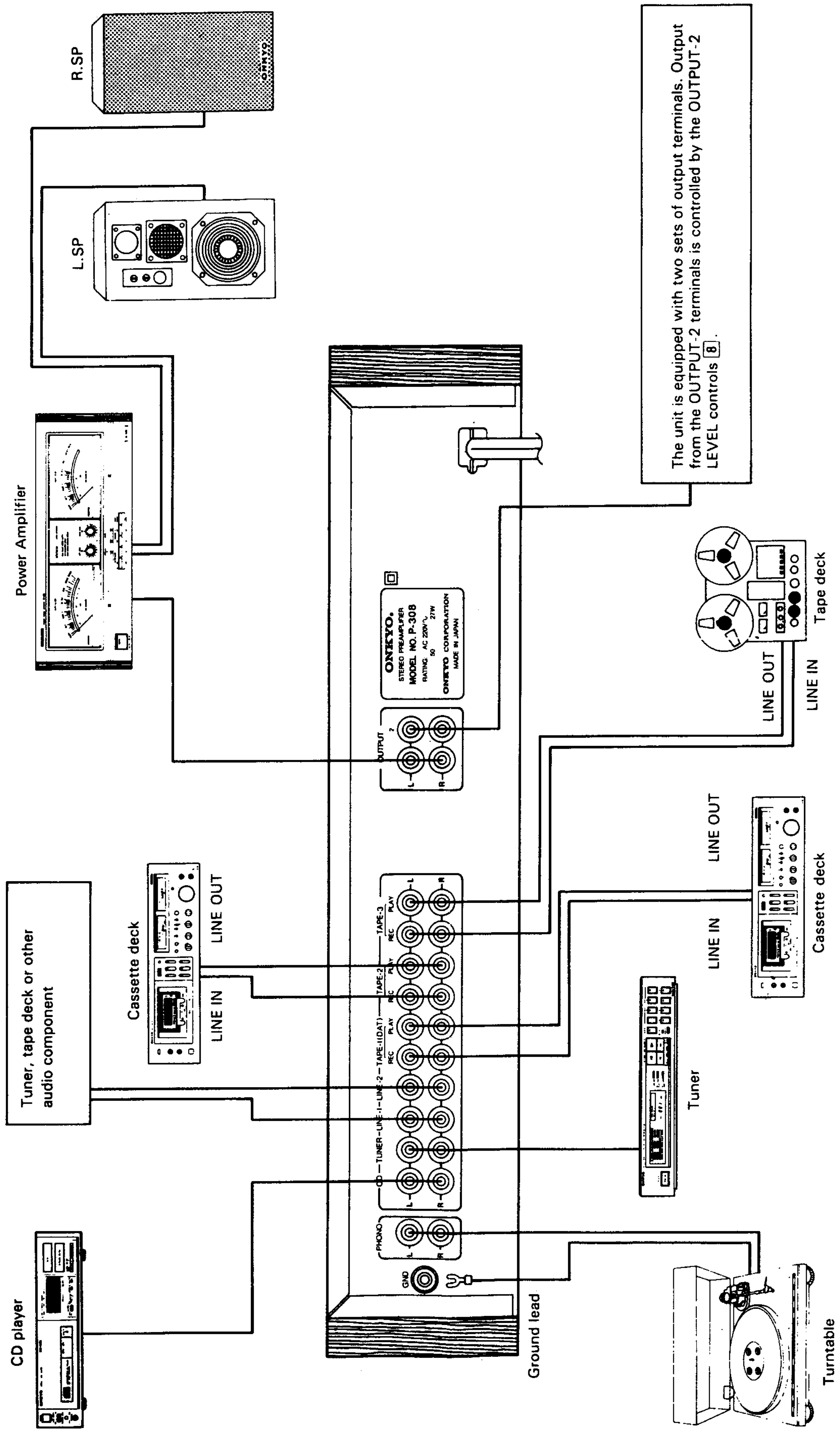
DISPLAY PC BOARD (NADIS-2662-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Diodes	
D851,D852	225142	SEL2413K
D853,D854	225142CG or 225142DG or 225142DY	SEL2913CG or SEL2913DG or SEL2913DY
D856	225142	SEL2413K
	Holder	
	27190455	Holder (LED)

SWITCH PC BOARD (NASW-2663-1A)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
C981	3500065A	0.01μF, AC400V, Capacitor (IS)
P901	27300601	SB-1925, Cover (capacitor)
S901	25035398	NPS-111-362P, Power switch

SYSTEM CONNECTIONS

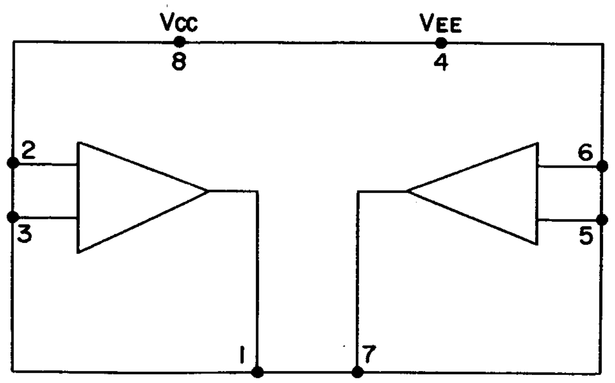

R.SP
L.SP
Power Amplifier
Tuner, tape deck or other audio component
Cassette deck
LINE OUT
LINE IN
CD player
OUTPUT
PHONO
GND
CD—TUNER—LINE-1—LINE-2—TAPE-1(DAT)—TAPE-2—TAPE-3
REC PLAY
L
R
ONKYO
STEREO PREAMPLIFIER
MODEL NO. P-308
ONKYO CORPORATION
MADE IN JAPAN
Ground lead
Turntable
Tuner
Cassette deck
LINE IN
LINE OUT
Tape deck
LINE OUT
LINE IN

The unit is equipped with two sets of output terminals. Output from the OUTPUT-2 terminals is controlled by the OUTPUT-2 LEVEL controls [8].

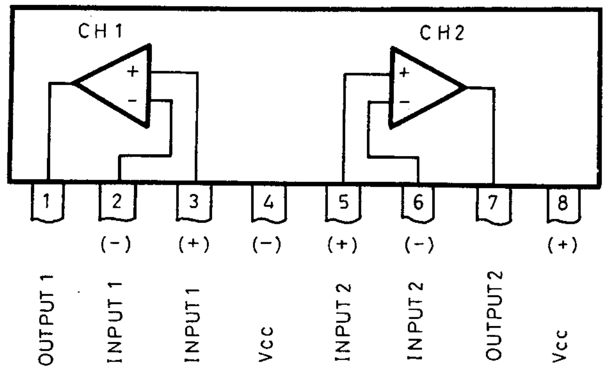
- DO NOT PLUG IN THE POWER CORD UNTILL ALL CONNECTIONS HAVE BEEN COMPLETED AND THOROUGHLY CHECKED.

IC BLOCK DIAGRAM

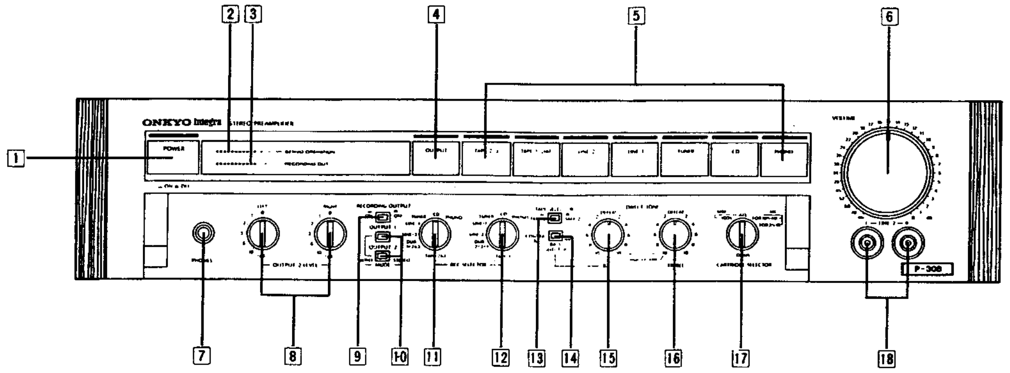
NJM4558D


Vcc
VEE
8
4
2
3
6
5
1
7

M-5216L


CH 1
CH 2
1
2
3
4
5
6
7
8
(−)
(+)
(−)
(+)
(−)
(+)
OUTPUT 1
INPUT 1
INPUT 1
Vcc
INPUT 2
INPUT 2
OUTPUT 2
Vcc

FRONT PANEL FACILITIES

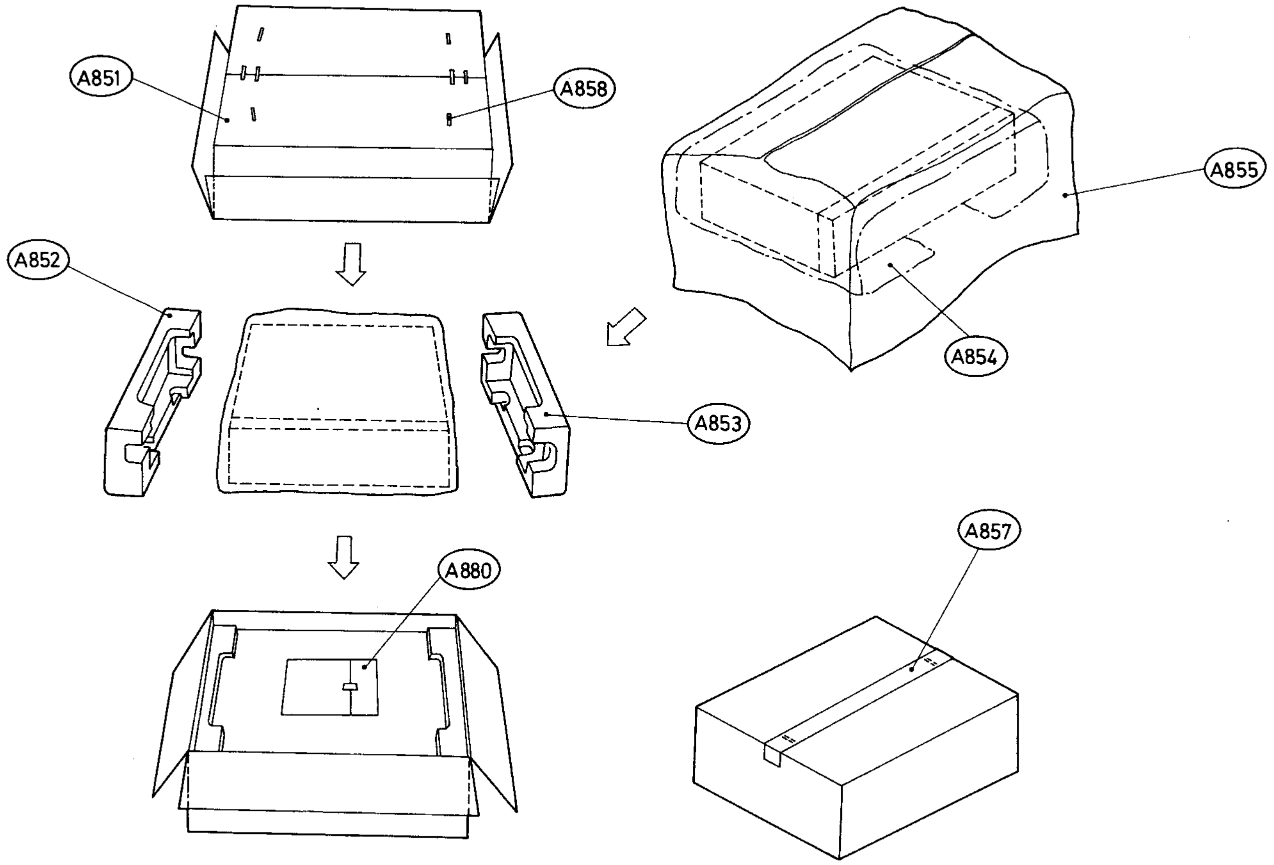

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
ONKYO Integra
P-308

1. Power Switch (POWER)
2. Servo Operation Indicator (SERVO OPERATION)
3. Recording Indicator (RECORDING OUT)
4. Output Switch and Indicator (OUTPUT)
5. Input Selector Switches and Indicators
6. Volume Control (VOLUME)
7. Headphone Jack (PHONES)
8. Output-2 Level Controls (OUTPUT-2 LEVEL)
9. Recording Output Switch (RECORDING OUTPUT)
10. Mode Switches (MODE)

11.12. Recording Source Selectors (REC. SELECTOR)

13. Tape Selector (TAPE SELECTOR)
14. Bass Selector Switch (BASS SELECTOR)
15. Bass Control (BASS)
16. Treble Control (TREBLE)
17. Cartridge Selector Switch (CARTRIDGE SELECTOR)
18. Line-2 Input Terminal (LINE-2)

PACKING PROCEDURES


A851
A858
A855
A852
A854
A853
A857
A880

REF. NO.	PARTS NO.	DESCRIPTION	
A851	29051309A	Master carton box	
A852	29091079	Pad (L)	
A853	29091080	Pad (R)	
A854	29095318	Protection sheet	
A855	29100038A	720 x 950mm, Poly-vinyl bag	
A857	260012	Damplon tape	
A858	282301	Sealing hook	
A880	Accessary bag ass'y		
	29341006	Instruction manual	[D][N][X]
	29341007	Instruction manual	[G][W][Q]
	29365006-7	Warranty card	[N]
	29365012A	Warranty card	[X]
	29368002C	Service station list	[N]
	29358002C	Service station list	[X]
	2910006A	250 x 350mm, Poly-vinyl bag for accessary	
	25055018	CV-K-1, Conversion plug	[W]
	25055251	CV-CP, Conversion plug	[X]
	28330072	Cap (AC outlet)	[X]

NOTE
[D]: Only 120V models
[G]: Only 220V models
[W]: Only 120V/220V models
[N]: Only U.S.A. models
[X]: Only Military market models
[Q]: Only British and Australian models

1	2	3	4	5	6	7

SCHEMATIC DIAGRAM

(120V Model)

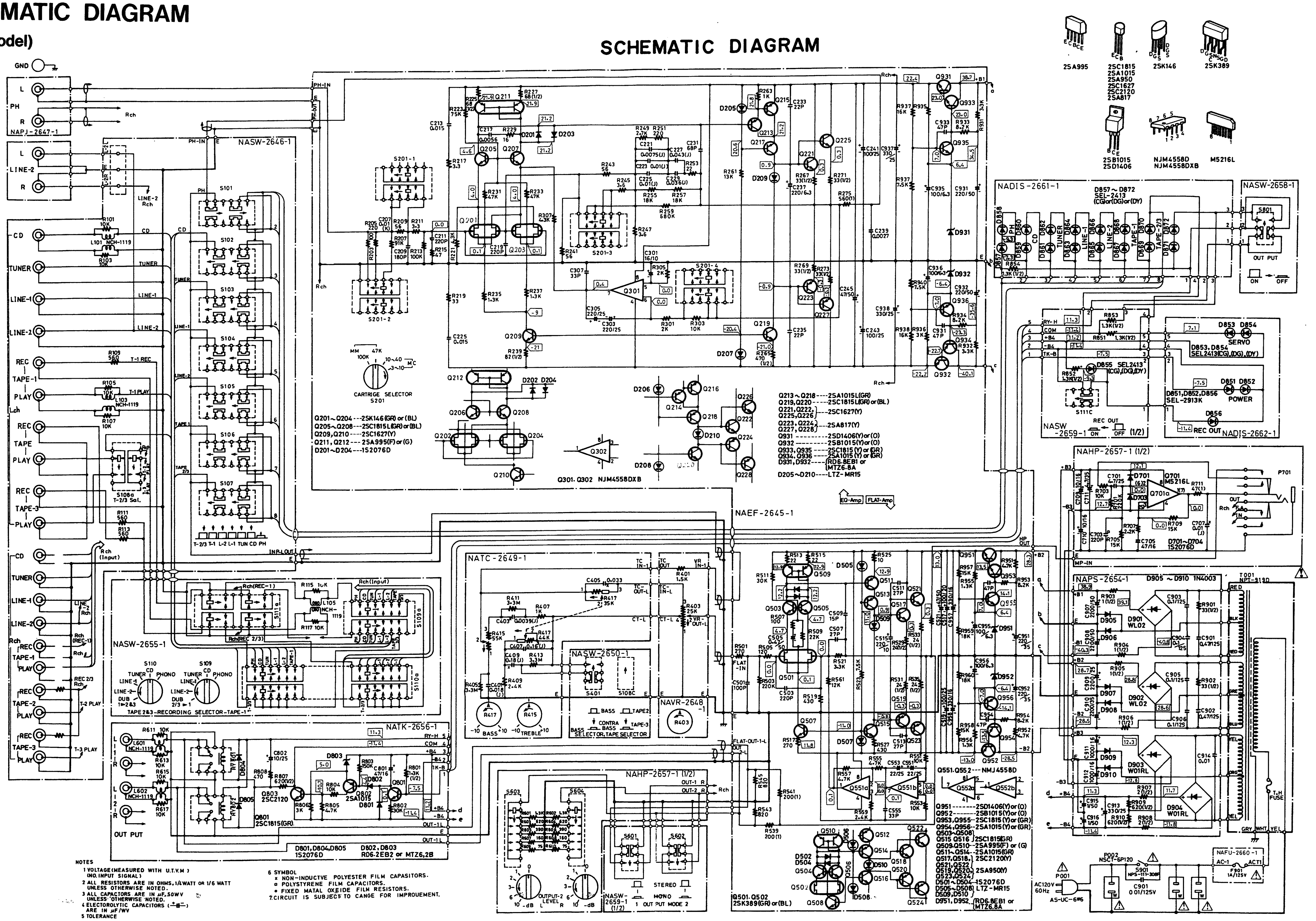
A

B

C

D

E


SCHEMATIC DIAGRAM
GND
PH
NAPJ-2647-1
LINE-2
CD
TUNER
LINE-1
REC TAPE-1 PLAY
REC TAPE-2 PLAY
REC TAPE-3 PLAY
NASW-2646-1
S101
S102
S103
S104
S105
S106
S107
T-2/3 T-1 L-2 L-1 TUN CD PH
S201-1
S201-2
S201-3
S201-4
CARTRIGE SELECTOR S201
MM 47K 100K
Q201~Q204---2SK146(GR) or (BL)
Q205~Q208---2SC1815L(GR) or (BL)
Q209,Q210---2SC1627(Y)
Q211,Q212---2SA995(F) or (G)
D201~D204---1S2076D
Q301, Q302 NJM4558DXB
Q213~Q218---2SA1015L(GR)
Q219,Q220---2SC1815L(GR) or (BL)
Q221,Q222, Q225,Q226 ---2SC1627(Y)
Q223,Q224, Q227,Q228 ---2SA817(Y)
Q931---2SD1406(Y) or (O)
Q932---2SB1015(Y) or (O)
Q933,Q935---2SC1815(Y) or (GR)
Q934,Q936---2SA1015(Y) or (GR)
D931,D932---RD6.8EB1 or MTZ6.8A
D205~D210---LTZ-MR15
EQ-Amp
FLAT-Amp
NAEF-2645-1
2SA995
2SC1815 2SA1015 2SA950 2SC1627 2SC2120 2SA817
2SK146
2SK389
2SB1015 2SD1406
NJM4558D NJM4558DXB
M5216L
NADIS-2661-1
D857~D872 SEL-2413 (CG) or (DG) or (DY)
NASW-2658-1
S801
OUT PUT
ON OFF
SERVO
D853,D854 SEL2413C(CG),(DG),(DY)
D851,D852,D856 SEL-2913K
POWER
REC OUT
NASW-2659-1
NADIS-2662-1
NAHP-2657-1 (1/2)
P701
D701~D704 1S2076D
Q701 M5216L
NAPS-2654-1
D905~D910 1N4003
T001 NPT-919D
NAFU-2660-1
F901 1A/125V
S901
P001 AC120V 60Hz AS-UC-6#6
NSCT-6P120
C901 0.01/125V
FUSE
RED
BLK
BLU
YEL
GRY WHT YEL
NATC-2649-1
BASS
TREBLE
NASW-2650-1
S401
S108C
BASS CONTRA BASS TAPE-3
BASS SELECTOR TAPE SELECTOR
NAVR-2648
NASW-2655-1
S110
S109
TAPE 2&3-RECORDING SELECTOR-TAPE-1
NATK-2656-1
OUT PUT
D801,D804,D805 1S2076D
D802,D803 RD6-2EB2 or MTZ6,2B
Q803 2SC2120
Q802 2SA1015
Q801 2SC1815(GR)
NAHP-2657-1 (1/2)
OUTPUT-2 LEVEL
NASW-2659-1 (1/2)
STEREO MONO
OUT PUT MODE 2
Q501,Q502 2SK389(GR) or (BL)
Q551,Q552---NMJ4558D
Q951---2SD1406(Y) or (O)
Q952---2SB1015(Y) or (O)
Q953,Q955---2SC1815(Y) or (GR)
Q954,Q956---2SA1015(Y) or (GR)
Q503~Q508
Q509,Q510---2SA995(F) or (G)
Q511~Q514---2SA1015(GR)
Q515,Q516 2SC1815(GR)
Q517,Q518 2SC2120(Y)
Q519,Q520 Q523,Q524 2SA950(Y)
D501~D504---1S2076D
D505~D508 LTZ-MR15
D509,D510
D951,D952 RD6.8EB1 or MTZ6.8A

NOTES

1 VOLTAGE(MEASURED WITH U.T.V.M) (NO.INPUT SIGNAL)

2 ALL RESISTORS ARE IN OHMS, 1/4WATT OR 1/6 WATT UNLESS OTHERWISE NOTED.

3 ALL CAPACTORS ARE IN µF, 50WV UNLESS OTHERWISE NOTED.

4 ELECTOROLYTIC CAPACITORS (+‖−) ARE IN µF/WV

5 TOLERANCE

G	J	K	M	P	H
± 2%	±5%	± 10%	±20%	+100% -0%	± 3%

6 SYMBOL

x NON-INDUCTVE POLYESTER FILM CAPASITORS.

▫ POLYSTYRENE FILM CAPACITORS.

• FIXED MATAL OXEIDE FILM RESISTORS.

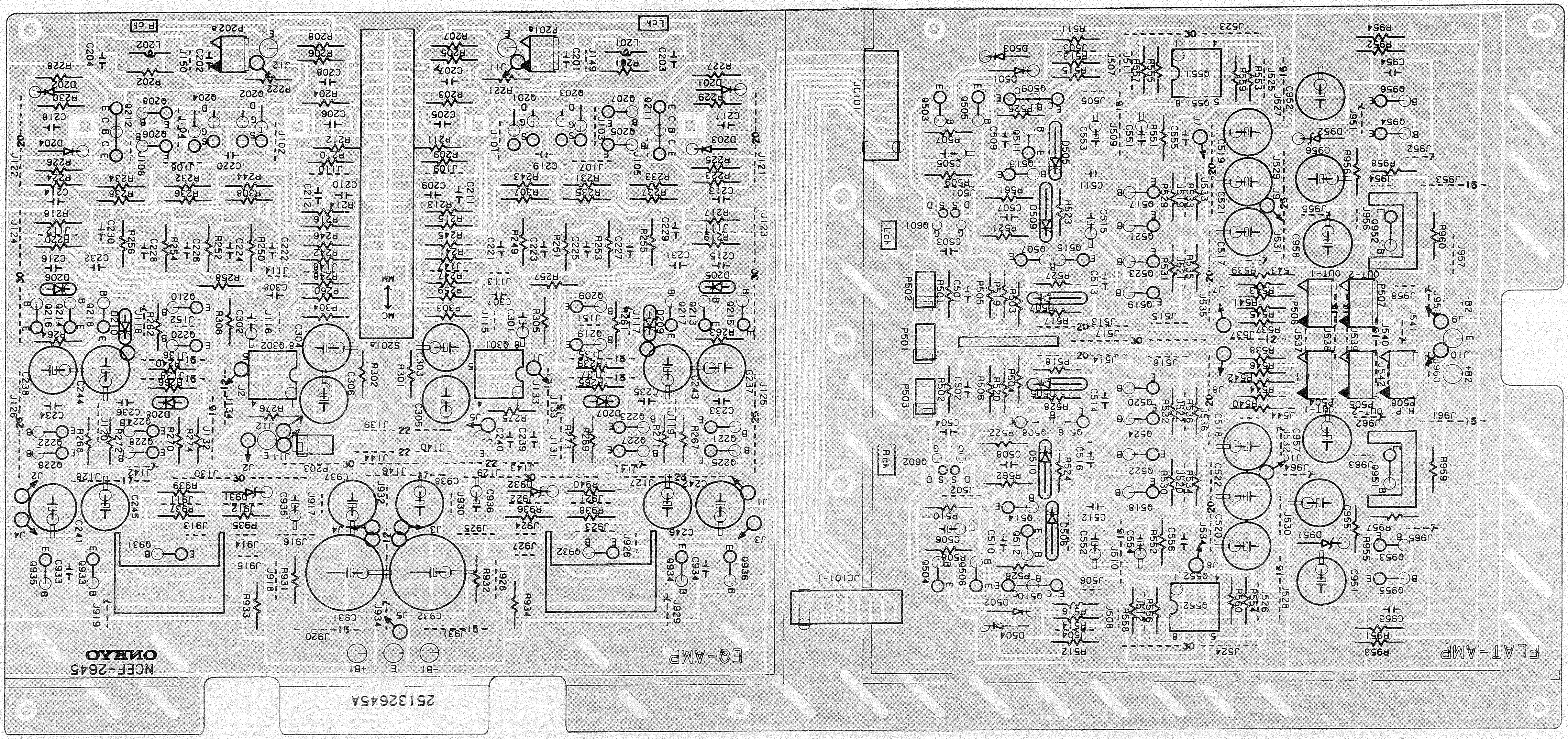
7 CIRCUIT IS SUBJECT TO CANGE FOR IMPROUEMENT.

P-308 UD

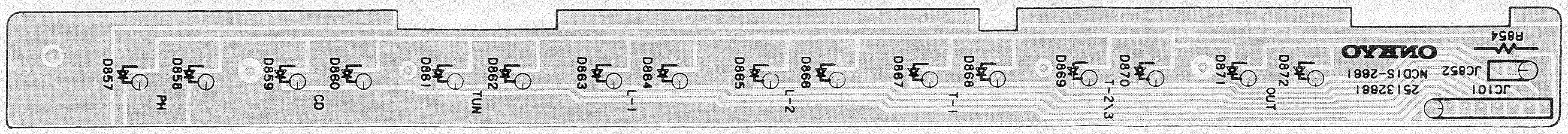
ONKYO CORPORATION

PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

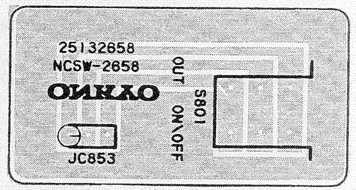
NAEF-2645


EQ-AMP
FLAT-AMP
NCEF-2645
25132645A
Rch
Lch
JC101
JC101-1
+B1
E
-B1
+B2
-B2

NADIS-2661

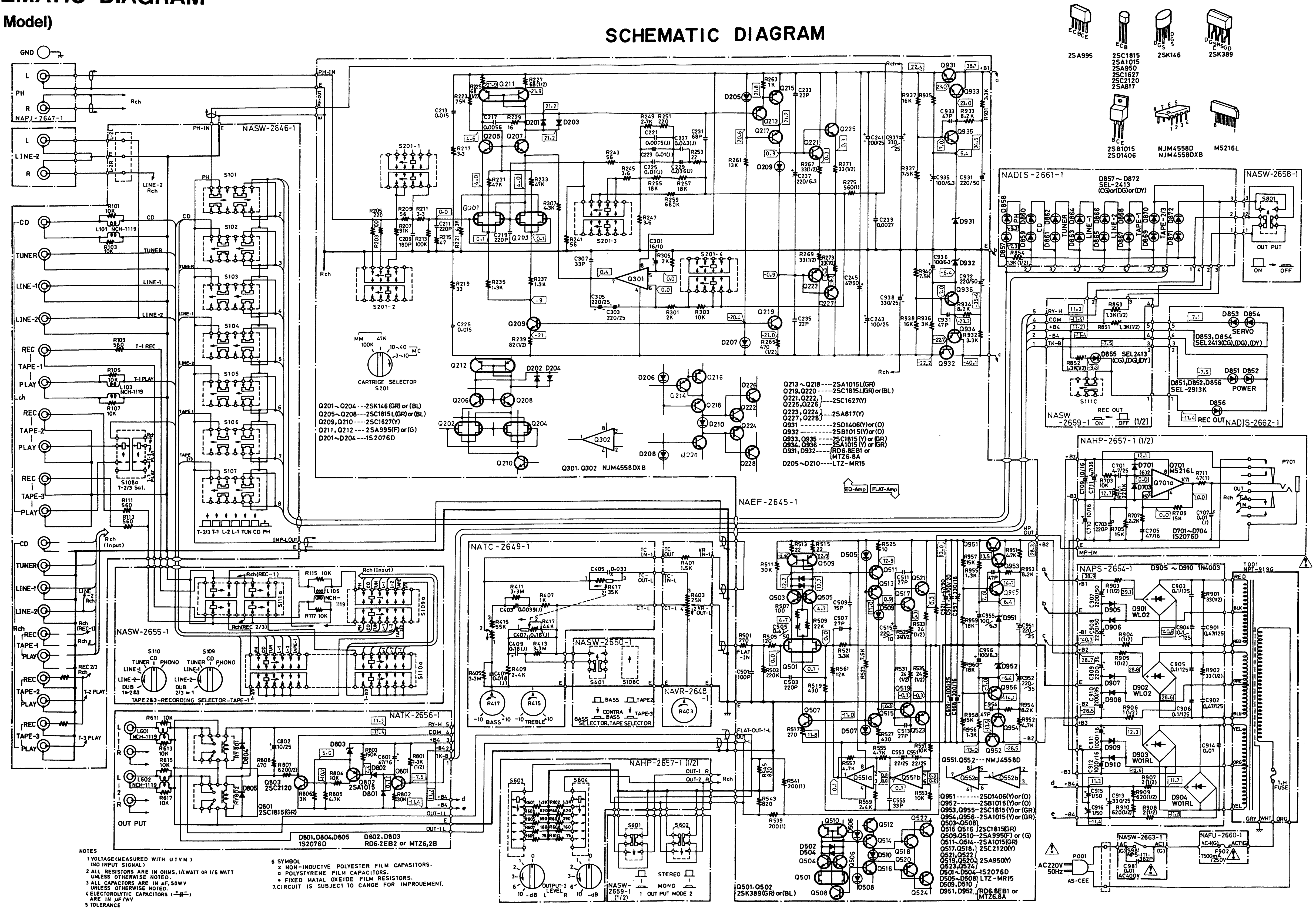

D857
PH
D858
D859
D860
CD
D861
D862
TUN
D863
D864
L-1
D865
D866
L-2
D867
D868
T-1
D869
D870
T-2/3
D871
D872
OUT
R854
JC852
JC101
NCDIS-2661
25132661

NASW-2658


25132658
NCSW-2658
OUT
S801
ON/OFF
JC853

SCHEMATIC DIAGRAM

(220V Model)


1
2
3
4
5
6
7
A
B
C
D
E
SCHEMATIC DIAGRAM
2SA995
2SC1815
2SA1015
2SA950
2SC1627
2SC2120
2SA817
2SK146
2SK389
2SB1015
2SD1406
NJM4558D
NJM4558DXB
M5216L
NAPJ-2647-1
NASW-2646-1
NAEF-2645-1
NADIS-2661-1
NASW-2658-1
NASW-2659-1
NADIS-2662-1
NAHP-2657-1 (1/2)
NAPS-2654-1
NATC-2649-1
NASW-2650-1
NAVR-2648-1
NASW-2655-1
NATK-2656-1
NASW-2663-1
NAFU-2660-1
T001 NPT-919G
CARTRIGE SELECTOR S201
TAPE 2&3 -RECORDING SELECTOR- TAPE-1
BASS SELECTOR, TAPE SELECTOR
OUT PUT
AC220V 50Hz
AS-CEE
P001
EQ-Amp
FLAT-Amp
SERVO
POWER
REC OUT
Q201~Q204---2SK146(GR) or (BL)
Q205~Q208---2SC1815L(GR) or (BL)
Q209,Q210----2SC1627(Y)
Q211,Q212---2SA995(F) or (G)
D201~D204---1S2076D
Q301, Q302 NJM4558DXB
Q213~Q218----2SA1015L(GR)
Q219,Q220-----2SC1815L(GR) or (BL)
Q221,Q222, Q225,Q226 ---2SC1627(Y)
Q223,Q224, Q227,Q228 ---2SA817(Y)
Q931----------2SD1406(Y) or (O)
Q932----------2SB1015(Y) or (O)
Q933,Q935----2SC1815(Y) or (GR)
Q934,Q936----2SA1015(Y) or (GR)
D931,D932----RD6.8EB1 or MTZ6.8A
D205~D210----LTZ-MR15
D857~D872 SEL-2413 (CG) or (DG) or (DY)
D853,D854 SEL2413(CG),(DG),(DY)
D851,D852,D856 SEL-2913K
D701~D704 1S2076D
D905~D910 1N4003
Q551,Q552---NMJ4558D
Q951--------2SD1406(Y) or (O)
Q952--------2SB1015(Y) or (O)
Q953,Q955--2SC1815(Y) or (GR)
Q954,Q956--2SA1015(Y) or (GR)
Q503~Q508, Q515 Q516 2SC1815(GR)
Q509,Q510--2SA995(F) or (G)
Q511~Q514--2SA1015(GR)
Q517,Q518, Q521,Q522 2SC2120(Y)
Q519,Q520, Q523,Q524 2SA950(Y)
D501~D504--1S2076D
D505~D508, D509,D510 LTZ-MR15
D951,D952 RD6.8EB1 or MTZ6.8A
Q501, Q502 2SK389(GR) or (BL)
D801,D804,D805 1S2076D
D802,D803 RD6.2EB2 or MTZ6,2B

NOTES

1 VOLTAGE (MEASURED WITH UTVM)
(NO INPUT SIGNAL)

2 ALL RESISTORS ARE IN OHMS, 1/4WATT OR 1/6 WATT UNLESS OTHERWISE NOTED.

3 ALL CAPACTORS ARE IN µF, 50WV UNLESS OTHERWISE NOTED.

4 ELECTOROLYTIC CAPACITORS (+‖−) ARE IN µF/WV

5 TOLERANCE

G	J	K	M	P	H
± 2%	±5%	± 10%	±20%	+100% -0%	± 3%

6 SYMBOL

x NON-INDUCTVE POLYESTER FILM CAPASITORS.

▫ POLYSTYRENE FILM CAPACITORS.

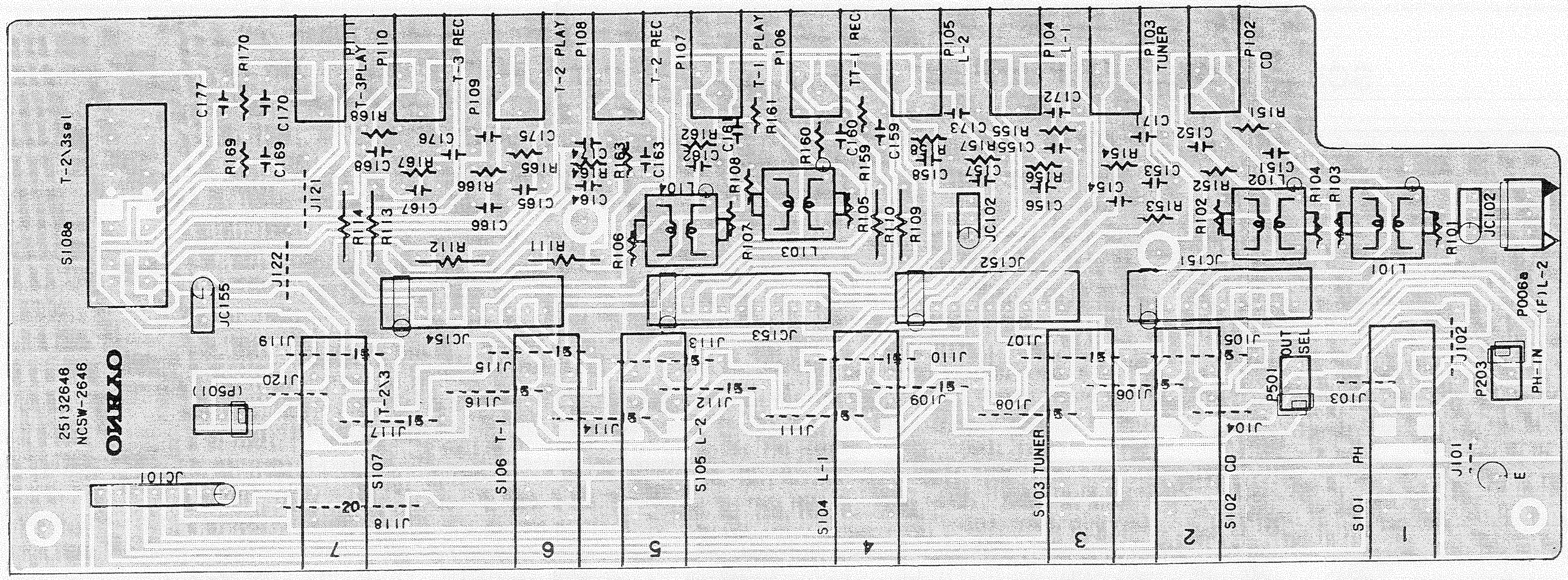
• FIXED MATAL OXEIDE FILM RESISTORS.

7. CIRCUIT IS SUBJECT TO CANGE FOR IMPROUEMENT.

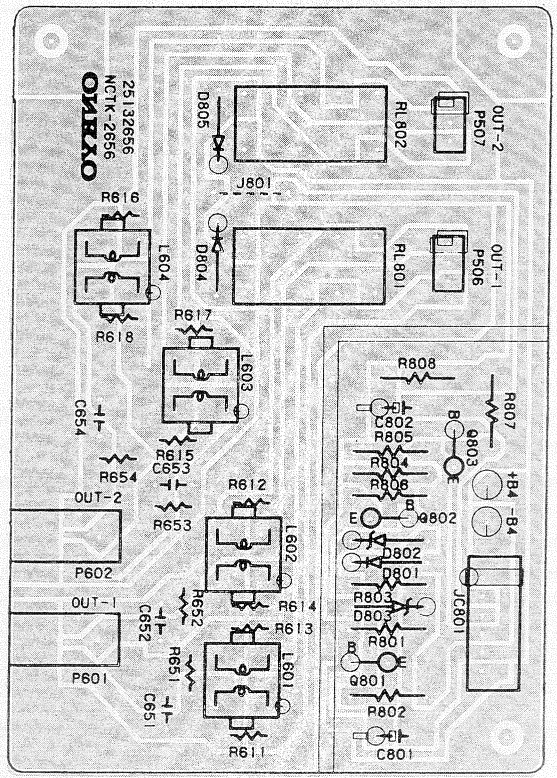
P-308 UG

ONKYO CORPORATION

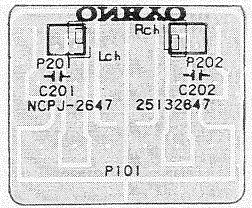
NASW-2646


ONKYO
25132646
NCSW-2646
P111 T-3PLAY
P110
T-3 REC
P109
T-2 PLAY
P108
T-2 REC
P107
T-1 PLAY
P106
TT-1 REC
P105 L-2
P104 L-1
P103 TUNER
P102 CD
S107
S106 T-1
S105 L-2
S104 L-1
S103 TUNER
S102 CD
S101 PH
P203 PH-IN
P501 OUT SEL
P006a (F/L-2)
7
6
5
4
3
2
1

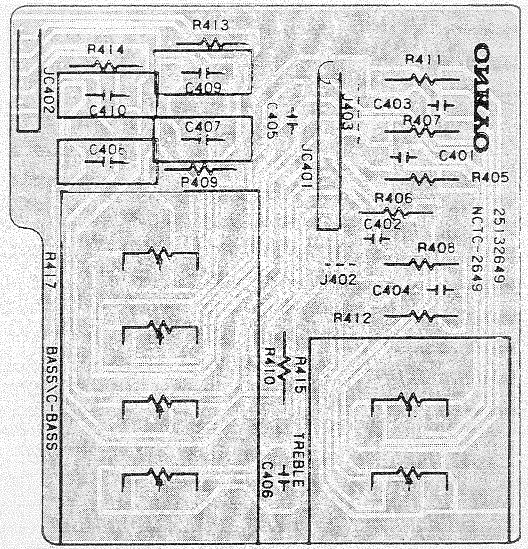
NATK-2656


ONKYO
25132656
NCTK-2656
OUT-2
P507
RL802
OUT-1
P506
RL801
J801
D805
D804
L604
L603
L602
L601
R616
R618
R617
R615
C653
C654
R654
OUT-2
R653
P602
OUT-1
P601
R612
R652
C652
R614
R613
R651
C651
R611
R808
R807
C802
R805
R804
R806
Q803
+B4 -B4
Q802
D802
D801
R803
D803
R801
Q801
R802
C801
JC801

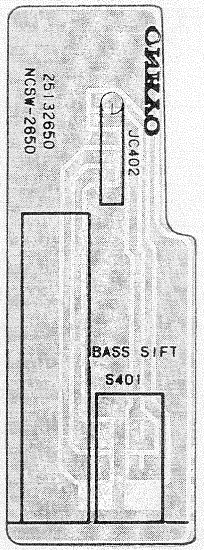
NAPJ-2647


ONKYO
Rch
Lch
P201
P202
C201
C202
NCPJ-2647
25132647
P101

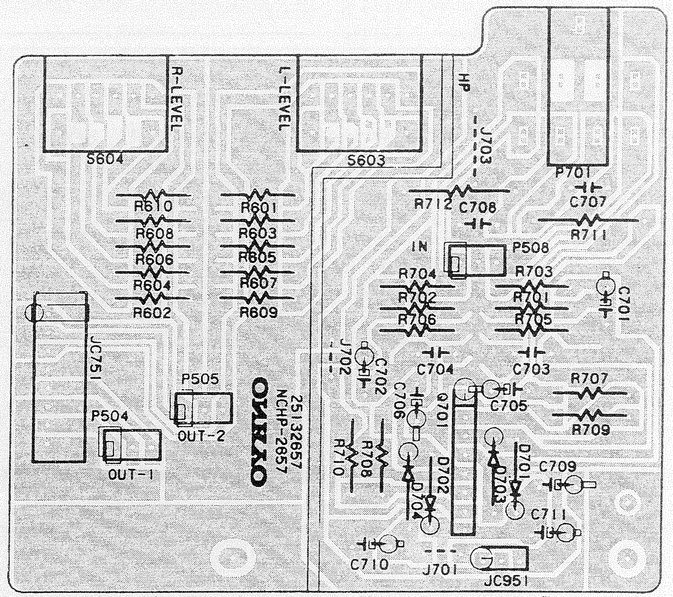
NATC-2649


ONKYO
25132649
NCTC-2649
R413
R414
C409
C410
C407
C405
P409
JC402
J403
JC401
R411
C403
R407
C401
R405
R406
C402
R408
J402
C404
R412
R417
BASS/C-BASS
R410
R415
TREBLE
C406

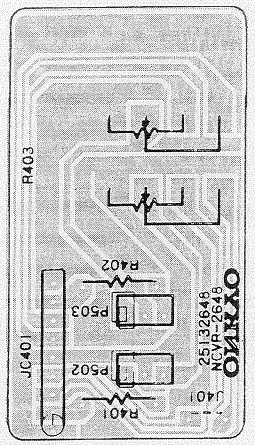
NASW-2650


ONKYO
25132650
NCSW-2650
JC402
BASS SIFT
S401

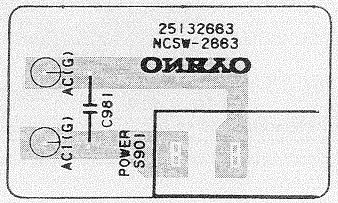
NAHP-2657


R-LEVEL
L-LEVEL
HP
S604
S603
J703
P701
R610
R608
R606
R604
R602
R601
R603
R605
R607
R609
R712
C708
C707
R711
IN
P508
R704
R702
R706
R703
R701
R705
C701
JC751
J702
C702
C706
C704
C703
C705
R707
R709
P505
OUT-2
P504
OUT-1
ONKYO
25132657
NCHP-2657
R710
R708
Q701
D702
D704
D701
D703
C709
C711
C710
J701
JC951

NAVR-2648


R403
R402
P503
P502
R401
JC401
ONKYO
25132648
NCVR-2648

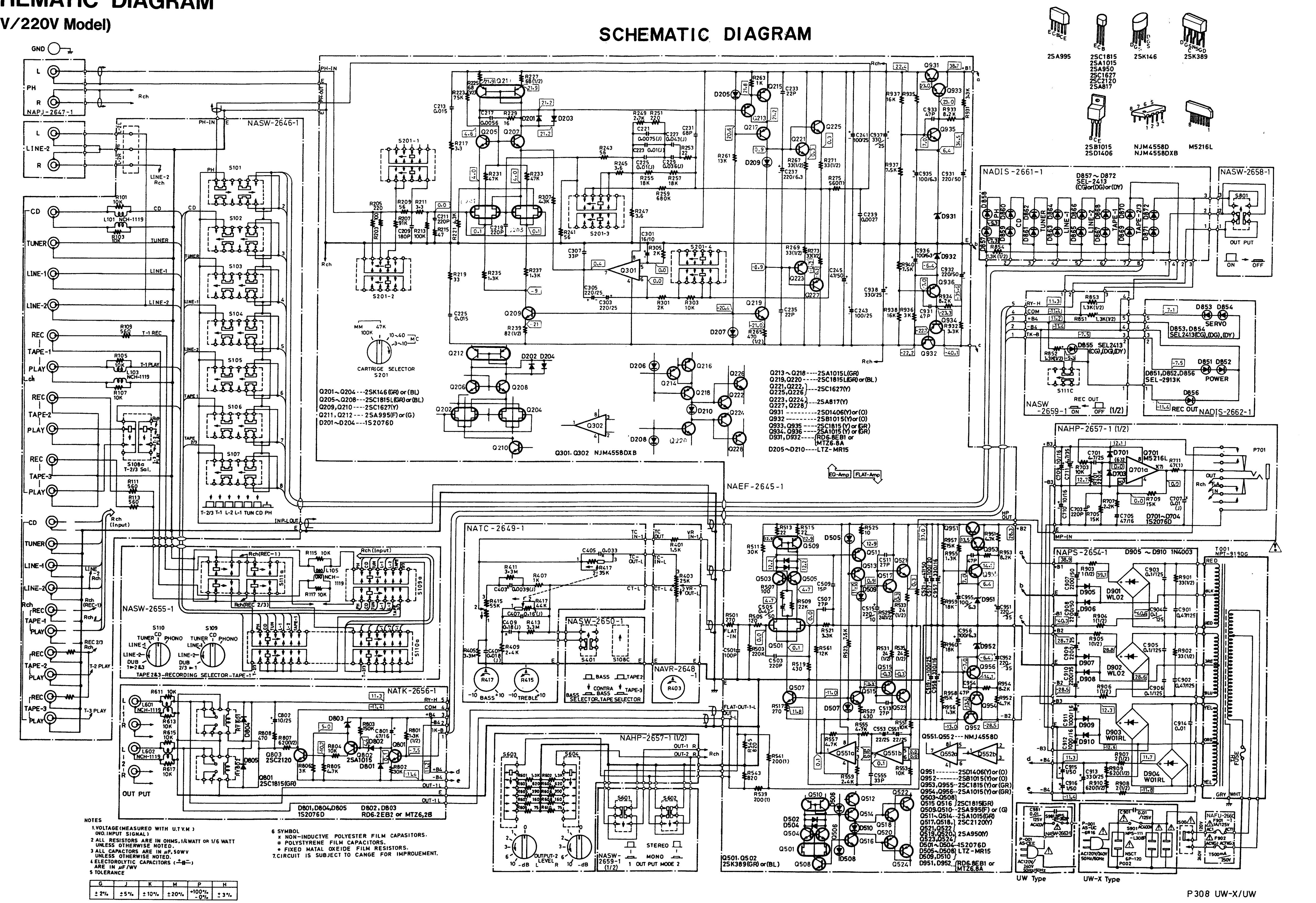
NASW-2663


25132663
NCSW-2663
ONKYO
AC(G)
C981
AC1(G)
POWER
S901

SCHEMATIC DIAGRAM

(120V/220V Model)

SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
A
B
C
D
E
GND
PH
L
R
NAPJ-2647-1
LINE-2
CD
TUNER
LINE-1
REC
TAPE-1
PLAY
TAPE-2
TAPE-3
NASW-2646-1
S101
S102
S103
S104
S105
S106
S107
T-2/3 T-1 L-2 L-1 TUN CD PH
S108a T-2/3 Sel.
NASW-2655-1
S110
S109
TUNER CD PHONO
LINE-2
DUB 1→2&3
DUB 2→1
TAPE 2&3—RECORDING SELECTOR—TAPE-1
S111a
S109a
S110a
NATK-2656-1
OUT PUT
D801,D804,D805 1S2076D
D802,D803 RD6.2EB2 or MTZ6,2B
Q801 2SC1815(GR)
Q802 2SA1015
Q803 2SC2120
PH-IN
Rch
S201-1
S201-2
S201-3
S201-4
MM 100K 47K
10~40
3~10
MC
CARTRIGE SELECTOR S201
Q201~Q204---2SK146(GR) or (BL)
Q205~Q208---2SC1815L(GR) or (BL)
Q209,Q210----2SC1627(Y)
Q211,Q212---2SA995(F) or (G)
D201~D204---1S2076D
Q301
Q302
Q301,Q302 NJM4558DXB
Q213~Q218----2SA1015L(GR)
Q219,Q220-----2SC1815L(GR) or (BL)
Q221,Q222, Q225,Q226 ---2SC1627(Y)
Q223,Q224, Q227,Q228 ---2SA817(Y)
Q931 ---------2SD1406(Y) or (O)
Q932 ---------2SB1015(Y) or (O)
Q933,Q935 ----2SC1815 (Y) or (GR)
Q934,Q936 ----2SA1015 (Y) or (GR)
D931,D932----RD6.8EB1 or MTZ6.8A
D205~D210----LTZ-MR15
EQ-Amp
FLAT-Amp
NAEF-2645-1
2SA995
2SC1815
2SA1015
2SA950
2SC1627
2SC2120
2SA817
2SK146
2SK389
2SB1015
2SD1406
NJM4558D
NJM4558DXB
M5216L
NADIS-2661-1
D857~D872 SEL-2413 (CG) or (DG) or (DY)
NASW-2658-1
S801
OUT PUT
ON
OFF
D853,D854 SEL2413(CG),(DG),(DY)
SERVO
D855 SEL2413 (CG),(DG),(DY)
D851,D852,D856 SEL-2913K
POWER
REC OUT
NASW-2659-1
NADIS-2662-1
NAHP-2657-1 (1/2)
Q701 M5216L
D701~D704 1S2076D
P701
NATC-2649-1
BASS
TREBLE
NASW-2650-1
S401
S108C
BASS SELECTOR
TAPE SELECTOR
CONTRA BASS
TAPE-2
TAPE-3
NAVR-2648-1
R403
NAHP-2657-1 (1/2)
S603
S604
OUTPUT-2 LEVEL
-10dB
NASW-2659-1 (1/2)
S601
S602
STEREO
MONO
1 OUT PUT MODE 2
Q501,Q502 2SK389(GR) or (BL)
Q551,Q552---NMJ4558D
Q951--------2SD1406(Y) or (O)
Q952--------2SB1015(Y) or (O)
Q953,Q955--2SC1815 (Y) or (GR)
Q954,Q956--2SA1015 (Y) or (GR)
Q503~Q508 Q515 Q516 2SC1815(GR)
Q509,Q510--2SA995(F) or (G)
Q511~Q514--2SA1015(GR)
Q517,Q518, Q521,Q522 2SC2120(Y)
Q519,Q520, Q523,Q524 2SA950(Y)
D501~D504--1S2076D
D505~D508 D509,D510 LTZ-MR15
D951,D952 RD6.8EB1 or MTZ6.8A
NAPS-2654-1
D905~D910 1N4003
T001 NPT-9190G
D901 WL02
D902 WL02
D903 W01RL
D904 W01RL
P-001 AS-CEE
AC120V/240V 50Hz/60Hz
UW Type
UW-X Type
NAFU-2660
T500mA 250V

NOTES

1. VOLTAGE (MEASURED WITH U.T.V.M) (NO. INPUT SIGNAL)
2. ALL RESISTORS ARE IN OHMS, 1/4WATT OR 1/6 WATT UNLESS OTHERWISE NOTED.
3. ALL CAPACTORS ARE IN μF, 50WV UNLESS OTHERWISE NOTED.
4. ELECTOROLYTIC CAPACITORS (⊣+ −) ARE IN μF/WV
5. TOLERANCE

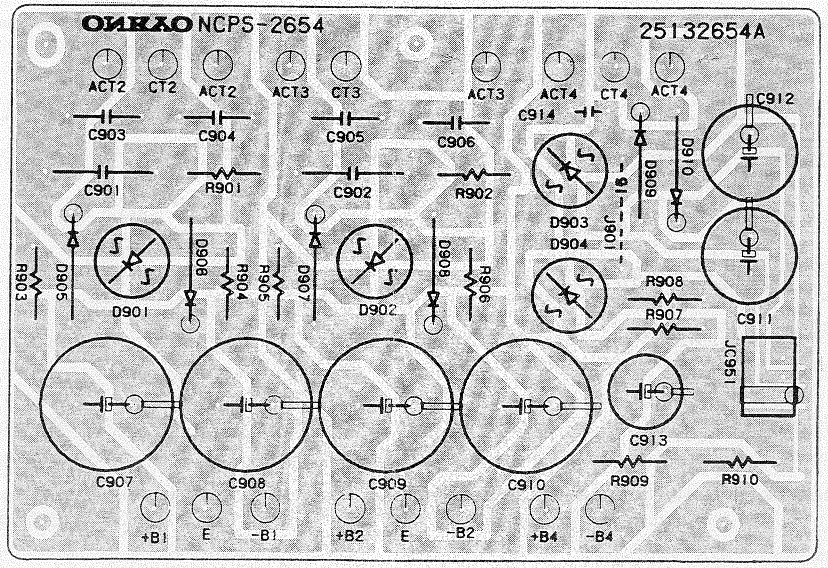
G	J	K	M	P	H
±2%	±5%	±10%	±20%	+100% −0%	±3%

6. SYMBOL
   - × NON-INDUCTVE POLYESTER FILM CAPASITORS.
   - ▫ POLYSTYRENE FILM CAPACITORS.
   - • FIXED MATAL OXEIDE FILM RESISTORS.
7. CIRCUIT IS SUBJECT TO CANGE FOR IMPROUEMENT.

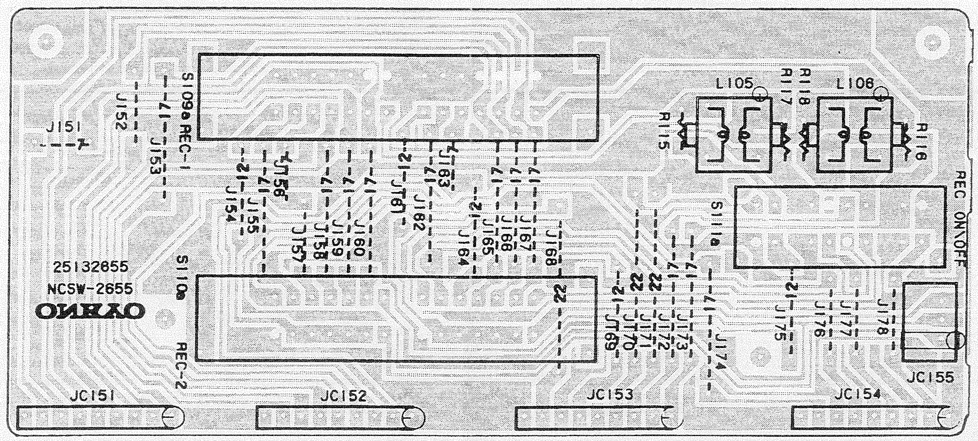
P308 UW-X/UW

ONKYO CORPORATION

NAPS-2654


ONKYO NCPS-2654
25132654A
ACT2
CT2
ACT2
ACT3
CT3
ACT3
ACT4
CT4
ACT4
C912
C914
C903
C904
C905
C906
C901
R901
C902
R902
D909
D910
J901
D903
D904
R903
D905
D901
D908
R904
R905
D907
D902
D908
R906
R908
R907
C911
JC951
C913
C907
C908
C909
C910
R909
R910
+B1
E
-B1
+B2
E
-B2
+B4
-B4

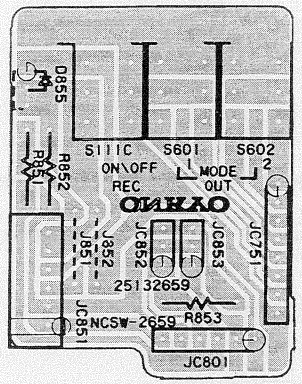
NASW-2655

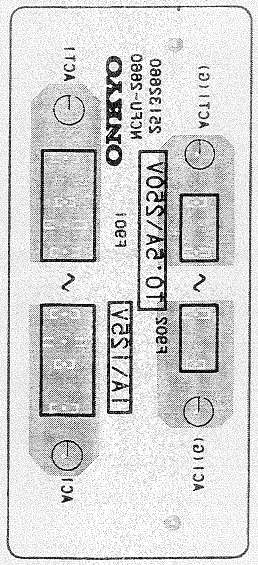

J151
J152
J153
S109a REC-1
J154
J155
J156
J157
J158
J159
J160
J161
J162
J163
J164
J165
J166
J167
J168
J169
J170
J171
J172
J173
J174
J175
J176
J177
J178
L105
R117
R118
L106
R115
R116
S111a
REC ON/OFF
S110a
REC-2
25132655
NCSW-2655
ONKYO
JC151
JC152
JC153
JC154
JC155

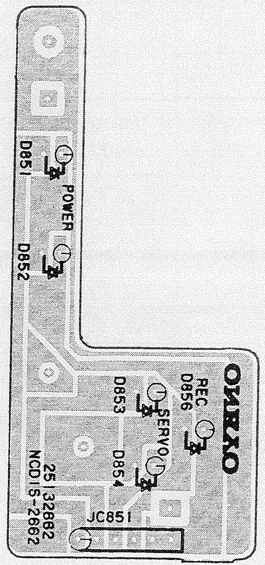
NAFU-2660

NADIS-2662

NASW-2659


D855
S111C
ON/OFF
REC
S601
MODE
S602
OUT
R852
ONKYO
J852
J851
JC852
JC853
JC751
25132659
NCSW-2659
R853
JC851
JC801


ONKYO
25132660
NCFU-2660
AC1
AC1(D)
F901
F902
T0.5A/250V
T0.5A/125V


D851
POWER
D852
D853
D856
REC
SERVO
D854
ONKYO
25132662
NCDIS-2662
JC851